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B.Sc/4th Sem (H)/COMS/23(CBCS)

2023

4th Semester Examination

COMPUTER SCIENCE (Honours)

Paper : C 10-T

(Database Management Systems)

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. Define functional dependency.
2. Distinguish between super key and candidate key.
3. What is the objective of normalization?
4. State ACID properties of transaction.
5. What is generalization?
6. What is unstructured and structured data?

P.T.O.



(2)

7. What is lock?

8. What are "referential constraint actions"?

Group - B

Answer any four questions : 5x4=20

9. Given a set of FDs for the relation schema R(A, B, C, D) with Primary key AB. FDs are

- D → C, C → D, AC → D, AD → C, BC → D, BD → C. In which normal form is R? 5

10. What is Redundancy? Explain the anomalies in relational database. 1+4

11. Explain 3NF & BCNF. What is the difference between them? 4+1

12. Explain three level architecture in DBMS. 2+3

13. What are the some disadvantages of time stamping methods for concurrency control? 5

14. What is Granularity? What is the need of indexing in DBMS? 2+3

Group - C

Answer any one question : 10x1=10

15. (a) Write SQL Queries for following set of tables :

EMPLOYEE (EmpNo, Name, DoB, Address, Gender, Salary, DNumber)



(3)

DEPARTMENT (DNumber, Dname, ManagerEmpNo, ManagerStartDate).

(i) Display the Age of 'male' employees.

(ii) Display all employees in Department named 'Marketing'.

(iii) Display the name of highest salary paid 'female' employee.

(iv) Which employee is oldest manager in company?

(v) Display the name of department of the employee 'SMITH'. 2+2+2+2+2

16. What is the role of database administrator? State the difference between DDI, DML and DCL? Rewrite the following WHERE clause without the use of the 'IN' special operator :

WHERE V-STATE IN ('TN', 'FL', 'GA') 2+6+2
